Project Baseline Summary Report

Data Source: **EM CDB** Report Number: **GEN-01b**

Operations/Field Office: **Idaho** Print Date: **3/10/2000**

Site Summary Level: **Idaho National Engineering and Environmental Laboratory** HQ ID: **0563**

Project **ID-ER-106 / Radioactive Waste Management Complex Remediation**

General Project Information

Project Description Narratives

Purpose, Scope, and Technical Approach:

SUMMARY: Waste disposed at the Subsurface Disposal Area (SDA) includes mixed low-level radioactive waste, and transuranic contaminated mixed waste, all of which is contained in various forms and packages buried in the 97-acre SDA. The assessment phase will investigate, characterize, and quantify the nature and extent of contamination.

The cleanup phase will implement a Remedial Action alternative that achieves acceptable risk levels and meets State, Federal, and DOE Applicable or Relevant and Appropriate Requirements. Remedial Actions will continue to be performed for OU 7-08, organic contamination in the Vadose Zone; OU 7-12, Pad A; OU 7-10, Pit 9 Staged Interim action; and initiated for OUs 7-13/14.

The cleanup technologies for all OUs will be considered under the WAG 7 Comprehensive Record of Decision. It is anticipated that the SDA will be stabilized and capped after limited retrieval of waste from the transuranic pits are completed.

PURPOSE: Assessment and cleanup activities for WAG 7 (Radioactive Waste Management Complex) are necessary to evaluate the risk to human health and the environment posed by radioactive and hazardous wastes buried at the site, and to remediate the site to prevent future spread of contamination. Activities being conducted as part of this project include:

* OU 7-10 Staged Interim Action activities
* Field sampling of groundwater and vadose zone volatiles
* Baseline Risk Assessment and Remedial Investigation of site and subsequent reports
* Fate and transport modeling of contaminants
* Treatability/Feasibility Studies
* Remedial Investigation/Feasibility Study report preparation and defense
* Proposed Plan and Record of Decision preparation and defense
* Remedial Design/Remedial Action scoping and implementation.

This project directly supports the requirements of the Federal Facility Agreement and Consent Order, which implements the Comprehensive Environmental Response, Compensation, and Liability Act at the Idaho National Engineering & Environmental Laboratory (INEEL), for the assessment and remediation of the Radioactive Waste Management Complex, except for LMAES action and LMITCO subcontract oversight of Pit 9. Remedial action is being performed for OU 7-08, organic contamination in the Vadose Zone, and remedial action is completed for OU 7-12 Pad A, except for maintenance and monitoring requirements. The WAG 7 OUs are as follows:

* OU 7-01 SDA Soil Vaults
* OU 7-02 SDA Acid Pit
* OU 7-03 Non-transuranic (TRU) Contaminated Pits and Trenches
* OU 7-04 Air Pathways

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* OU 7-05 Surface Water Pathways and Surficial Sediments
* OU 7-06 Ground Water Pathway
* OU 7-07 Vadose Zone (Rad/Metals)
* OU 7-08 Vadose Zone Organics Remedial Investigation/Feasibility Study
* OU 7-09 Transuranic Storage Area Releases
* OU 7-10 Pit 9 Interim Action
* OU 7-11 Radioactive Waste Management Complex Septic Systems
* OU 7-12 Pad A Remedial Investigation/Feasibility Study
* OU 7-13 Transuranic (TRU) Pits and Trenches Remedial Investigation/Feasibility Study
* OU 7-14 WAG Comprehensive Remedial Investigation/Feasibility Study.

Preliminary evaluation of all OUs has been completed. OU 7-11, Septic Systems, is the only OU that agreement was reached for No Further Action determination. All other OUs in WAG 7 will be further evaluated in the Comprehensive Pits and Trenches Remedial Investigation/Feasibility Study. OUs 7-13 and 7-14 were combined to form one Comprehensive Remedial Investigation/Feasibility Study (OU 7-13/14). This project will assess the comprehensive risk for the site and conduct remediation inclusive of all OUs. It should be noted that unacceptable risks are anticipated to be related to previously disposed of organic and transuranic wastes, not the low level radioactive wastes that continue to be placed into the burial ground Pits 17 and 20.

DEFINITION OF SCOPE: Waste disposed at the SDA includes mixed low-level radioactive waste and transuranic contaminated mixed waste, all of which is contained in various forms and packages buried in the 97-acre SDA. The assessment phase will investigate, characterize, and quantify the nature and extent of contamination. This will be accomplished in the WAG 7 Comprehensive Pits and Trenches Remedial Investigation/Feasibility Study. The Transuranic Pits and Trenches Remedial Investigation/Feasibility Study (OU 13) and the WAG 7 Comprehensive Remedial Investigation/Feasibility Study (OU 7-14) were combined into one Comprehensive Remedial Investigation/Feasibility Study (OU 7-13/14). Routine monitoring of the groundwater, vadose zone, and Pad A will also be performed in support of the Comprehensive Remedial Investigation/Feasibility Study. The cleanup phase will implement a Remedial Action alternative that achieves acceptable risk levels and meets State, Federal, and Department of Energy Applicable or Relevant and Appropriate Requirements. Remedial Actions will continue to be performed for OU 7-08, organic contamination in the Vadose Zone; OU 7-12, Pad A; OU 7-10, Pit 9 Staged Interim Action; and initiated for OUs 7-13/14.

TECHNICAL APPROACH: The cleanup technologies for OUs, Transuranic Pits and Trenches, Non-transuranic Pits and Trenches, Vadose Zone Rad Metals, Soil Vaults, Air Pathway, Surface Water Pathway, Ground Water Pathway, Transuranic Storage Area Releases, and the Acid Pit will be considered under the WAG 7 Comprehensive Record of Decision. It is anticipated that the SDA will be stabilized and capped, after limited retrieval of waste from the transuranic and non-transuranic pits and trenches are completed. The Comprehensive Record of Decision is the final WAG 7 Record of Decision that will be used to closeout the Comprehensive Environmental Response, Compensation, and Liability Act activities at the Radioactive Waste Management Complex and will include information about all the previous WAG 7 Records of Decision. The technology that is being used on the organic contamination in the Vadose Zone, OU 7-08, is vapor vacuum extraction with flameless thermal oxidation.

Current or planned remediation activities are NOT dependent upon EM-50 science or technology development initiatives. However, development of these sciences or technologies could potentially result in schedule and/or cost savings.

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Project **ID-ER-106 / Radioactive Waste Management Complex Remediation**

Project Description Narratives

Seeded data in the waste module was not provided by the PBS Manager. The data source is AVS, but validation is not possible because the data is entered by waste stream, not PBS.

Project Status in FY 2006:

* By 2006, routine and verification monitoring of groundwater will continue
* Remedial action for OU 7-08, organic contamination in the Vadose Zone, will continue with operation of the vapor vacuum extraction systems and remedial action for the Comprehensive Pits and Trenches (OU 7-13/14) will be in progress
* For OU 7-13/14 the Remedial Design/Remedial Action Statement of Work, Remedial Design/Remedial Action Work Plan, Operational Readiness Review, construction and systems testing will be completed. The operational phase of remediation will have been initiated
* Pad A (OU 7-12) maintenance and monitoring will continue.

Post-2006 Project Scope:

* By 2020, retrieval and treatment of waste for OU 7-13/14 will be completed and treated waste will have been shipped to the Waste Isolation Pilot Plant for disposal.
* By 2026, a cap over the SDA will have been installed and all Decontamination and Dismantlement completed.
* By 2056, the 30-year maintenance and monitoring requirement of the site will be completed.
* All remediation activities for WAG 7 will be conducted under OU 7-13/14.

Project End State

The final end state does not differ from that described in the Project Description of this PBS. However, the cleanup process and end states described for Operable Unit 7-13/14 are assumptions to date and will not be finalized until the Record of Decision is signed (the end state for Operable Unit 7-08 has been decided due to Record of Decision completion). No regulatory or stakeholder acceptance has been received for Operable Unit 7-13/14 end state assumptions. Completion of the activities contained in this Project Baseline Summary support the goal of delisting the INEEL from the National Priorities List.

A conceptual vision of the end state in 2094 for the INEEL, and each of the major facility areas, has been defined through a compliance reengineering effort. These end states have not been agreed upon by the regulators, stakeholders, or Tribal Nations. The compliance reengineering project will identify a pathway to achieve concurrence on each end state.

Cost Baseline Comments:

The Baseline costs represented here do not include contingency for authorized work packages, but do contain contingency for planning packages. This contingency is removed upon development of detailed work packages. The INEEL Remediation Program has, since 1991, promoted use of the bottoms up/Activity Based Costing (ABC) approach, in the development of planning estimates in its Assessment and Remedial Design and Remedial Action projects. All INEEL Remediation Program cost estimates have been developed using sound technical and planning principles, and are accompanied by basis of estimate documentation intended to demonstrate the rationale and specifics behind the estimates. Bottoms Up estimating, or ABC, wherein the work scope is portrayed down to the task level, is both desired and encouraged, but not always practical.

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Project Description Narratives

The basis of estimates include a well defined statement of work, performance measures, products required for completion, products delivered, key support activities, and known milestones, etc., for every level of the program work scope. For work scope with definable milestones and deliverables, the cost estimates are very detailed and more precise. For more subjective work scope, where it is difficult to identify a specific end-product or deliverable, detail is provided to the lowest level possible. In most cases, the clarity of the available scope and associated planning assumptions is a key consideration in determining the specific technique used to develop a particular cost estimate.

Escalation rates used for FY-01 through the lifecycle of the project are 2.1% compounded annually.

The cost estimates associated with this Project Baseline Summary are based on completing the enforceable requirements identified in the Federal Facility Agreement and Consent Order.

Safety & Health Hazards:

This project is presently collecting the appropriate data to make risk based decisions regarding future clean up activities through the CERCLA process. In the outyears, remedial actions concerning the INEEL Radioactive Waste Management Complex Remediation Project will be performed. Consequently the necessary safety and health functions required to maintain safe and compliant operations now and in the future are in place and operating properly. The primary hazards associated with the closure of the Radioactive Waste Management Complex Remediation Project include Am-241, C-14, Cl-36, Co-60, Cs-137, I-129, Nb-94, Np-237, Pu-239, Pu-240, Ra-226, SR-90, Tc-99, U-233, U-234, U-235, U-236, U-238, Carbon Tetrachloride, methylene chloride, and nitrates. During remedial actions and maintenance and monitoring activities there will also be a number of industrial safety and industrial hygeine related hazards to address such as slips, trips, and falls; lifting; working on elevated structures; moving equipment; inhalation of dusts; temperature extremes; etc.

Hazard documentation developed includes, but is not limited to, project specific health and safety plans, detailed operating procedures, standard operating procedures, job safety analyses, job hazard analyses, etc. These documents will be developed during the early stages of each project and will determine the methods, procedures, and equipment used during project implementation to reduce hazards to workers and the environment.

Safety & Health Work Performance:

The resources necessary to accomplish the planned work safely and in compliance are identified through the Health and Safety Program requirements as well as the authorization basis discussed previously. Resources allocated at the site to ensure compliance with health and safety requirements, as well as safety on the job include: radcon, safety, industrial hygiene, occupational medical, fire, emergency management, safeguards and security, performance oversight, quality, the Voluntary Protection Program, etc. Safety and health resources are planned and allocated into the appropriate category by cost center through the work breakdown structure and they are loaded into each project for each fiscal year. Institutional support, such as medical facilities and personnel, security, fire protection, etc., are funded out of the financial systems indirect labor adder, and project-specific safety and health professional support (e.g., industrial safety engineer) is identified in specific control account plans where the support is required. The average cost per FTE, burdened, is approximately $60/hour to $65/hour for each of the safety professionals identified above. Presently there are no plans to conduct full DOE operational readiness reviews although all projects will undergo a complete evaluation of their readiness to proceed with field activities. Applicable projects will complete unreviewed safety question determinations. Personnel are trained in Stop Work Authority, emergency preparedness procedures, health and safety plans, work plans, integrated safety management, integrated work control, conduct of

Project Description Narratives

operations, and conduct of maintenance, etc. Safety, radcon, health, fire, environmental, and quality personnel conduct routine inspections to ensure personnel and the environment are protected. The frequency of these inspections is dependent on the status of each particular project but generally ranges between daily to every other week. During field work the same level of ESH&Q support is required throughout the project. At this time the level of support required of the safety professionals will be reduced significantly and will only be performed during maintenance and monitoring activities. There are currently no unfunded or under funded safety, health, environmental, or quality resource requirements associated with this PBS. Upon completion of remedial actions, and the initiation of institutional controls, the level of safety and health resources required will be reduced to a minimum.

Resource levels vary from fiscal year to fiscal year depending on the extent of sampling and/or remediation activities being performed.

PBS Comments:

1) An assumption critical to the success of the Operable Unit 7-13/14 is that the Waste Isolation Pilot Plant will be open by 2006 and will accept the treated Environmental Restoration-generated transuranic waste from pre-1970 buried waste sites.
2) There is a significant public concern over the potential of aquifer contamination due to buried waste in the Subsurface Disposal Area. This project, under theFederal Facility Agreement and Consent Order, is specifically designed to address that concern and mitigate risks of sole-source aquifer contamination.
3) Low-level radioactive waste continues to be disposed in Pits 17-20, in the Subsurface Disposal Area. Disposal of this waste is managed by the Low-Level Waste Program. Through agreement with the Department of Energy-Idaho Operations Office, Waste Management Programs, and Environmental Restoration Programs, final closure of the Subsurface Disposal Area, including active low-level waste pits, will be the responsibility of Environmental Restoration Waste Area Group 7. Pits 17-20 are planned to be filled and closed by 2006.
4) The scope, schedule, and budget for future remediation of Operable Unit 7-13/14 are based on partial retrieval and treatment of the Subsurface Disposal Area (retrieval and treatment of all Rocky Flats transuranic waste).

Baseline Validation Narrative:

The INEEL Environmental Management Integration Team performed a compliance and cost estimating review of all activities associated with this PBS. This PBS reflects the comments and recommendations associated with the review. The Remediation Program has, since 1991, promoted use of the bottoms up/ABC approach, in the development of planning estimates for Assessment and Remedial Design and Remedial Action projects. All INEEL Remediation Program cost estimates have been developed using sound technical and planning principles and are accompanied by basis of estimate documentation intended to demonstrate the rationale and specifics behind the estimates. Bottoms Up estimating or Activity Based Costing, wherein the work scope is portrayed down to the task level, is both desired and encouraged.
The basis of estimates include a well defined statement of work, performance measures, products required for completion, products delivered, key support activities, and known milestones, etc., for every level of the program work scope. For work scope with definable milestones and deliverables, the cost estimates are very detailed and more precise. For more subjective work scope, where it is difficult to identify a specific end-product or deliverable, detail is provided to the lowest level possible. In most cases, the clarity of the available scope and associated planning assumptions is a key consideration in determining the specific technique used to develop a particular cost estimate.

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General PBS Information

Project Validated? Yes **Date Validated:** 2/3/1996

Has Headquarters reviewed and approved project? No

Date Project was Added: 12/1/1997

Baseline Submission Date:

FEDPLAN Project? Yes

Drivers:	CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
	Y	Y	N	N	N	Y	Y	Y

Project Identification Information

DOE Project Manager: Alan T. Jines

DOE Project Manager Phone Number: 208-526-7524

DOE Project Manager Fax Number: 208-526-0598

DOE Project Manager e-mail address: jinesa@inel.gov

Is this a High Visibility Project (Y/N):

Planning Section

Baseline Costs (in thousands of dollars)

	1997-2006 Total	2007-2070 Total	1997-2070 Total	1997	Actual 1997	1998	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006
PBS Baseline (current year dollars)	566,233	1,538,379	2,104,612	5,699	4,303	16,154	12,986	33,140	43,344	31,822	40,783	82,655	134,992	103,382	74,262
PBS Baseline (constant 1999 dollars)	516,775	1,088,776	1,605,551	5,699	4,303	16,154	12,986	33,140	42,204	30,348	38,094	75,617	120,958	90,729	63,832
PBS EM Baseline (current year dollars)	566,233	1,538,379	2,104,612	5,699	4,303	16,154	12,986	33,140	43,344	31,822	40,783	82,655	134,992	103,382	74,262
PBS EM Baseline (constant 1999	516,775	1,088,776	1,605,551	5,699	4,303	16,154	12,986	33,140	42,204	30,348	38,094	75,617	120,958	90,729	63,832

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Baseline Costs (in thousands of dollars)

	1997-2006 Total	2007-2070 Total	1997-2070 Total	1997	Actual 1997	1998	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006
dollars)															
	2007	**2008**	**2009**	**2010**	**2011-2015**	**2016-2020**	**2021-2025**	**2026-2030**	**2031-2035**	**2036-2040**	**2041-2045**	**2046-2050**	**2051-2055**	**2056-2060**	**2061-2065**	**2066-2070**
PBS Baseline (current year dollars)	57,265	81,044	104,287	92,241	476,520	459,835	221,656	16,475	4,446	5,281	4,761	5,279	7,862	1,427	0	0
PBS Baseline (constant 1999 dollars)	48,210	66,826	84,222	72,962	354,294	308,144	133,877	8,969	2,181	2,336	1,897	1,896	2,545	417	0	0
PBS EM Baseline (current year dollars)	57,265	81,044	104,287	92,241	476,520	459,835	221,656	16,475	4,446	5,281	4,761	5,279	7,862	1,427	0	0
PBS EM Baseline (constant 1999 dollars)	48,210	66,826	84,222	72,962	354,294	308,144	133,877	8,969	2,181	2,336	1,897	1,896	2,545	417	0	0

Baseline Escalation Rates

1997	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
0.00%	0.00%	0.00%	2.70%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%

2010	**2011-2015**	**2016-2020**	**2021-2025**	**2026-2030**	**2031-2035**	**2036-2040**	**2041-2045**	**2046-2050**	**2051-2055**	**2056-2060**	**2061-2065**	**2066-2070**
2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%

Project Reconciliation

Project Completion Date Changes:

Previously Projected End Date of Project: 9/1/2024

Current Projected End Date of Project: 9/30/2054

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Project Reconciliation

Explanation of Project Completion Date Difference (if applicable):

Consistency with lifecycle cost module required inclusion of long term surveillance and monitoring.

Project Cost Estimates (in thousands of dollars)

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars):	1,347,747	**Actual 1997 Cost:**	4,303	**Actual 1998 Cost:**	12,986
Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars):	1,330,458	**Inflation Adjustment (2.7% to convert 1998 to 1999 dollars):**			35,922
Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	1,366,380				

Project Cost Changes

	Cost Adjustments	Reconciliation Narratives
Cost Change Due to Scope Deletions (-):		
Cost Reductions Due to Efficiencies (-):		
Cost Associated with New Scope (+):		
Cost Growth Associated with Scope Previously Reported (+):	217,318	RD/RA reductions FY00-FY06 without accounting for related increases in outyears
Cost Reductions Due to Science & Technology Efficiencies (-):		
Subtotal:	1,583,698	
Additional Amount to Reconcile (+):	0	
Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	**1,583,698**	

Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
Completed Assessment Release Sites (10)	W7RSFA00				9/30/2000						
Completed Release Sites (9)	W7RSFC25				9/30/2025						
Completed of Release Sites (1)	W7RSFC03				9/30/2003						
OU 7-08 Draft O&M Report Sent by DOE-ID to	MSEP393		4/28/2005		4/28/2005		Y				

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Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
EPA/IDHW for Review											
OU 7-08 Draft RA Report Sent by DOE-ID to EPA/IDHW for Review	MSEP173		6/22/2002		6/22/2002		Y				
OU 7-08 Draft RD/RA WP Sent by DOE-ID to EPA/IDHW for Review	MSEP130		7/8/1995	7/8/1995		7/7/1995	Y				
OU 7-12 Draft RD/RA WP Sent by DOE-ID to EPA/IDHW for Review	MYEP135		4/19/1994	4/19/1994		4/19/1994	Y				
OU 7-12 Draft ROD to EPA/IDHW for Review	MYEP001		10/31/1993	10/31/1993		9/17/1993	Y				
OU 7-13 Draft RI/FS SOW Sent by DOE-ID to EPA/IDHW for Review	MZEP011		8/31/1995	8/31/1995		6/7/1995	Y				
OU 7-13 Draft RI/FS WP Sent by DOE-ID to EPA/IDHW for Review	MZEP052		1/31/1996	1/31/1996		10/31/1995	Y				
OU 7-13/14 Draft RI/FS WP Addendum A Sent by DOE-ID to EPA/IDHW	MZEP055		3/31/1998	3/31/1998		3/30/1998	Y				
OU 7-14 Draft RI/FS SOw Sent by DOE-ID to EPA/IDHW for Review	NAEP013		7/31/1996	7/31/1996		6/27/1995	Y				
OU 7-14 Draft RI/FS WP Sent by DOE-ID to EPA/IDHW for Review	NAEP051		12/31/1996	12/31/1996		10/31/1995	Y				
ou 7-12 Draft RA Report to EPA/IDHW for Review & Comment	MYEP190		10/9/1995	10/9/1995		4/17/1995	Y				
OU 7-13/14 draft Work Plan Addendum A sent by DOE-ID to EPA/IDHW for review and comment	MZEP055		3/1/1998	3/1/1998			Y				
OU 7-13/14 draft Work Plan Addendum B sent by DOE-ID to EPA/IDHW for review and comment	MZEP023		10/1/2001	12/1/2001			Y				
OU 7-08 draft O&M Report sent by DOE-ID to EPA/IDHW for revision	MSEP393		3/1/2005	3/1/2005			Y				
OU 7-08 draft RA Report sent by DOE-ID to EPA/IDHW for review and comment	MSEP173		7/1/2004	7/1/2004			Y				

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Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
OU 7-13 draft RI/FS Report sentby DOE-ID to EPA/IDHW for review and comment	MZEP026		2/1/2002	3/1/2002			Y				
OU 7-14 draft RI/FS Report sent by DOE-ID to EPA/IDHW for review and comment	NAEP017		1/31/2002	3/31/2002			Y				
OU 7-13/14 draft RI/FS ROD sent by DOE-ID to EPA/IDHW for review and comment	MZEP042		11/1/2002	12/1/2002			Y				
OU 7-14 draft RI/FS ROD send by DOE-ID to EPA/IDHW for review and comment	NAEP002		11/1/2002	12/1/2002			Y				
OU 7-10 Alternative Stage I Work Plan sent by DOE-ID to EPA/IDHW for review and comment	MUEP102		3/1/1998	3/1/1998			Y				
OU 7-10 Alternative Stage III Remedial Design (90% Design) sent by DOE-ID to EPA/IDHW for review/com	MUEP301		4/30/2003	4/30/2003			Y				
OU 7-10 Alternative Stage III RA WP & Ops/Maint Plan sent by DOE-ID to EPA/IDHW for review/comment	MUEP302		9/1/2003	9/1/2003			Y				
OU 7-13/14 draft RD Work Plan sent by DOE-ID to EPA/IDHW for review and comment	MZEP310		5/1/2003	5/1/2003			Y				
OU 7-13/14 draft RA Report sent by DOE-ID to EPA/IDHW for review and comment	MZEP175		7/1/2008	7/1/2008							
OU 7-13/14 draft RD/RA Report sent by DOE-ID to EPA/IDHW for review and comment	MZEP100		1/31/2006	1/31/2006							
OU 7-13/14 draft O&M Report sent by DOE-ID to EPA/IDHW for review and comment	MZEP220		8/1/2029	8/1/2029							
Project Start			10/1/1996								
Project Complete			9/30/2054								

Milestones - Part II

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Project **ID-ER-106 / Radioactive Waste Management Complex Remediation**

Milestone/Activity	Field Milestone Code	Critical Decision	Critial Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
Completed Assessment Release Sites (10)	W7RSFA00									Y	
Completed Release Sites (9)	W7RSFC25									Y	
Completed of Release Sites (1)	W7RSFC03									Y	
OU 7-08 Draft O&M Report Sent by DOE-ID to EPA/IDHW for Review	MSEP393										
OU 7-08 Draft RA Report Sent by DOE-ID to EPA/IDHW for Review	MSEP173										
OU 7-08 Draft RD/RA WP Sent by DOE-ID to EPA/IDHW for Review	MSEP130										
OU 7-12 Draft RD/RA WP Sent by DOE-ID to EPA/IDHW for Review	MYEP135										
OU 7-12 Draft ROD to EPA/IDHW for Review	MYEP001										
OU 7-13 Draft RI/FS SOW Sent by DOE-ID to EPA/IDHW for Review	MZEP011										
OU 7-13 Draft RI/FS WP Sent by DOE-ID to EPA/IDHW for Review	MZEP052										
OU 7-13/14 Draft RI/FS WP Addendum A Sent by DOE-ID to EPA/IDHW	MZEP055										
OU 7-14 Draft RI/FS SOw Sent by DOE-ID to EPA/IDHW for Review	NAEP013										
OU 7-14 Draft RI/FS WP Sent by DOE-ID to EPA/IDHW for Review	NAEP051										
ou 7-12 Draft RA Report to EPA/IDHW for Review & Comment	MYEP190										
OU 7-13/14 draft Work Plan	MZEP055										

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Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critial Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
Addendum A sent by DOE-ID to EPA/IDHW for review and comment											
OU 7-13/14 draft Work Plan Addendum B sent by DOE-ID to EPA/IDHW for review and comment	MZEP023										
OU 7-08 draft O&M Report sent by DOE-ID to EPA/IDHW for revision	MSEP393										
OU 7-08 draft RA Report sent by DOE-ID to EPA/IDHW for review and comment	MSEP173										
OU 7-13 draft RI/FS Report sentby DOE-ID to EPA/IDHW for review and comment	MZEP026										
OU 7-14 draft RI/FS Report sent by DOE-ID to EPA/IDHW for review and comment	NAEP017										
OU 7-13/14 draft RI/FS ROD sent by DOE-ID to EPA/IDHW for review and comment	MZEP042										
OU 7-14 draft RI/FS ROD send by DOE-ID to EPA/IDHW for review and comment	NAEP002										
OU 7-10 Alternative Stage I Work Plan sent by DOE-ID to EPA/IDHW for review and comment	MUEP102										
OU 7-10 Alternative Stage III Remedial Design (90% Design)	MUEP301										

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Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critial Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
sent by DOE-ID to EPA/IDHW for review/com											
OU 7-10 Alternative Stage III RA WP & Ops/Maint Plan sent by DOE-ID to EPA/IDHW for review/comment	MUEP302										
OU 7-13/14 draft RD Work Plan sent by DOE-ID to EPA/IDHW for review and comment	MZEP310										
OU 7-13/14 draft RA Report sent by DOE-ID to EPA/IDHW for review and comment	MZEP175										
OU 7-13/14 draft RD/RA Report sent by DOE-ID to EPA/IDHW for review and comment	MZEP100										
OU 7-13/14 draft O&M Report sent by DOE-ID to EPA/IDHW for review and comment	MZEP220										
Project Start				Y							
Project Complete					Y						

Performance Measure Metrics

Category/Subcategory	Units	1997-2006 Total	2007-2070 Total	1997-2070 Total	Actual Pre-1997	Planned 1997	Actual 1997	Planned 1998	Planned 1999	Planned 2000	Planned 2001	Planned 2002	Planned 2003	Planne 200
RS														
Assess.	NR	9.00	0.00	9.00	1.00								9.00	
RS														
Cleanup	NR	1.00	9.00	10.00									1.00	

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Performance Measure Metrics

Category/Subcategory	Units	1997-2006 Total	2007-2070 Total	1997-2070 Total	Actual Pre-1997	Planned 1997	Actual 1997	Planned 1998	Planned 1999	Planned 2000	Planned 2001	Planned 2002	Planned 2003	Planne 20(
Tech.														
Deployed	Ntd	8.00	0.00	8.00					3.00	3.00		2.00		

Category/Subcategory	Units	Planned 2004	Planned 2005	Planned 2006	Planned 2007	Planned 2008	Planned 2009	Planned 2010	Planned 2011 - 2015	Planned 2016 - 2020	Planned 2021 - 2025	Planned 2026 - 2030	Planned 2031 - 2035
RS													
Assess.	NR												
RS													
Cleanup	NR											9.00	
Tech.													
Deployed	Ntd												

Category/Subcategory	Units	Planned 2036 - 2040	Planned 2041 - 2045	Planned 2046 - 2050	Planned 2051 - 2055	Planned 2056 - 2060	Planned 2061 - 2035	Planned 2066 - 2070	Exceptions	Lifecycle Total
RS										
Assess.	NR									10.00
RS										
Cleanup	NR									10.00
Tech.										
Deployed	Ntd								3.00	8.00

Release Sites

Site Code	RSF ID	Change Flag	Description	Class/Subclass Name	Planned Assess. Year	Forecast Assess. Year	Actual Assess. Date	Planned Comp. Year	Forecast Comp. Year	Actual Comp. Date	Acc. Year	No Action	Comp. Status	RAD
INEL	0385		N/A \ SURFACE-WATER PATHWAYS AND SURFICIAL SEDIMENTS	Surface and Groundwater/Surface	2003	2003		2026	2026		1991	N		Y

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Release Sites

Site Code	RSF ID	Change Flag	Description	Class/Subclass Name	Planned Assess. Year	Forecast Assess. Year	Actual Assess. Date	Planned Comp. Year	Forecast Comp. Year	Actual Comp. Date	Acc. Year	No Action	Comp. Status	RAD
				Water										
INEL	0386		N/A \ VADOSE ZONE ORGANICS RI/FS	Waste/Landfills	1995	1995	12/2/1994	2003	2003		1991	N		Y
INEL	0390		RWMC-04 \ NON TRU CONTAMINATED WASTE PITS AND TRENCHES [RWMC-04]	Waste/Landfills	2003	2003		2026	2026		1991	N		Y
INEL	0393		RWMC-04 \ SDA ACID PIT [RWMC-04]	Waste/Landfills	2003	2003		2026	2026		1991	N		Y
INEL	0394		RWMC-04 \ SDA SOIL VAULTS [RWMC-04]	Waste/Landfills	2003	2003		2026	2026		1991	N		Y
INEL	0395		RWMC-04 \ TRU PITS AND TRENCHES RI/FS [RWMC-04]	Waste/Landfills	2003	2003		2026	2026		1991	N		Y
INEL	0396		RWMC-05 \ TSA RELEASES [RWMC-05]	Waste/Landfills	2003	2003		2026	2026		1991	N		Y
INEL	0397		RWMC-A \ AIR PATHWAY	Waste/Pits	2003	2003		2026	2026		1991	N		Y
INEL	0398		RWMC-C \ GROUNDWATER PATHWAY	Surface and Groundwater/Groundwater Plumes	2003	2003		2026	2026		1991	N		Y
INEL	0399		RWMC-D \ VADOSE ZONE (RAD/METALS)	Waste/Landfills	2003	2003		2026	2026		1991	N		Y

Technology Needs

Site Need Code: ID-6.1.01

Site Need Name: In-Situ Debris Characterization for Partial Retrieval

Focus Area Work Package ID: SS-10 **Focus Area Work Package:** Hot Spot Removal

Focus Area: SCFA **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both): Cost

Technologies **Cost Savings (in thousands of dollars)** **Range of Estimate**

Technology Needs

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	02457: I7 - MLLW-Soil/Sludge	Y	N
	02456: I6.1 - MLLW-Sludge	Y	N
	02448: I6 - MLLW-Sludge	Y	N
	02489: -	Y	N

Site Need Code: ID-6.1.02

Site Need Name: Real-time Field Instrumentation for Characterization and Monitoring Soils and Groundwater.

Focus Area Work Package ID: SS-01 **Focus Area Work Package:** Characterization, Monitoring, Modeling and Analysis

Focus Area: SCFA **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both): Cost

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	02457: I7 - MLLW-Soil/Sludge	Y	N
	02432: W2.2 - LLW-Soil	Y	N
	02446: I4.1 - Treated LLW-Soil	Y	N
	02443: I2 - HAZ-Soil	Y	N
	02465: -	Y	N
	02493: T9 - HAZ-Soil	Y	N
	02486: -	Y	N
	02460: -	Y	N

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Technology Needs

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	02459: -	Y	N
	02499: -	Y	N

Site Need Code: ID-6.1.23

Site Need Name: In-Situ Stabilization of Contaminated Waste

Focus Area Work Package ID: **Focus Area Work Package:**

Focus Area: **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both): Cost

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate
In Situ Vitrification Bottoms-up	0	
In Situ Vitrification Bottoms-up		
Innovative Grout (In Situ Stabilization)		
Innovative Grout (In Situ Stabilization)	0	
In Situ Stabilization and Retrieval System		
In Situ Stabilization and Retrieval System	0	

Site Need Code: ID-6.1.24

Site Need Name: Understanding the Migration of VOCs Around an ISV Melt

Focus Area Work Package ID: SS-03 **Focus Area Work Package:** Stabilization Technologies

Focus Area: SCFA **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both): Cost

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate

Technology Needs

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	02485: L3 - LLW-Soil	Y	N
	02487: -	Y	N
	02484: -	Y	N
	02488: T10 - LLW-Rubble/Debris	Y	N
	02486: -	Y	N

Site Need Code: ID-S.1.01

Site Need Name: Microbial Alteration of Heavy Metal and Radionuclide Partitioning at Mineral Surfaces

Focus Area Work Package ID:

Focus Area Work Package:

Focus Area:

Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both): Cost

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	02485: L3 - LLW-Soil	Y	N
	02483: -	Y	N
	02466: T4 - D&D MLLW-Rubble/Debris	Y	N
	02487: -	Y	N
	02464: L1 - HAZ-Soil	Y	N
	02463: T3 - MLLW-Soil	Y	N
	02484: -	Y	N
	02462: I8.1 - Treated MLLW	Y	N
	02461: I8 - MLLW-Soil	Y	N

Technology Needs

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	02496: W5 - MTRU-Sludge	Y	N
	02488: T10 - LLW-Rubble/Debris	Y	N
	02486: -	Y	N

Site Need Code: ID-S.1.04

Site Need Name: Real-time Field Instrumentation for Characterization and Monitoring Soils and Groundwater.

Focus Area Work Package ID:

Focus Area Work Package:

Focus Area:

Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both): Cost

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	02457: I7 - MLLW-Soil/Sludge	Y	N
	02456: I6.1 - MLLW-Sludge	Y	N
	02448: I6 - MLLW-Sludge	Y	N
	02432: W2.2 - LLW-Soil	Y	N
	02446: I4.1 - Treated LLW-Soil	Y	N
	02443: I2 - HAZ-Soil	Y	N
	02489: -	Y	N
	02465: -	Y	N
	02493: T9 - HAZ-Soil	Y	N
	02486: -	Y	N
	02460: -	Y	N

Technology Needs

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	02459: -	Y	N
	02499: -	Y	N

Site Need Code: ID-S.1.07

Site Need Name: Facilitated Transport at DOE Disposal Sites

Focus Area Work Package ID: **Focus Area Work Package:**

Focus Area: **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both): Cost

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	02496: W5 - MTRU-Sludge	Y	N

Site Need Code: ID-S.1.08

Site Need Name: Contaminant Transport in a Fractured Rock Vadose Zone

Focus Area Work Package ID: **Focus Area Work Package:**

Focus Area: **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both): Cost

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	02496: W5 - MTRU-Sludge	Y	N

Site Need Code: ID-S.2.01

Technology Needs

Site Need Name: Definition of ´Biologically Active Zones´ in Fractured Rock Environments

Focus Area Work Package ID: **Focus Area Work Package:**

Focus Area: **Agree with Technology Link:** N

Benefits (Cost, Risk Reduction, Both): Cost

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	02483: -	Y	N
	02496: W5 - MTRU-Sludge	Y	N

Site Need Code: ID-S.2.03

Site Need Name: Aqueous Transport of Soluble Radionuclides and Heavy Metals: Evaluation of Non-Equilibrium Processes and Native Surfaces in Porous Media

Focus Area Work Package ID: **Focus Area Work Package:**

Focus Area: **Agree with Technology Link:** Y

Benefits (Cost, Risk Reduction, Both): Cost

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	02443: I2 - HAZ-Soil	Y	N
	02459: -	Y	N
	02460: -	Y	N
	02486: -	Y	N
	02493: T9 - HAZ-Soil	Y	N
	02484: -	Y	N

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Technology Needs

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	02465: -	Y	N
	02463: T3 - MLLW-Soil	Y	N
	02464: L1 - HAZ-Soil	Y	N
	02499: -	Y	N
	02497: W2 - MTRU-Soil	Y	N
	02457: I7 - MLLW-Soil/Sludge	Y	N
	02446: I4.1 - Treated LLW-Soil	Y	N
	02432: W2.2 - LLW-Soil	Y	N
	02469: O2 - MLLW-Liquid	Y	N
	02470: O2.1 - MLLW-Solids	Y	N
	02498: W2.1 - MTRU-Soil/Rubble/Debris	Y	N
	02491: T7.1 - LLW-Soil	Y	N
	02483: -	Y	N
	02485: L3 - LLW-Soil	Y	N
	02492: T8 - HAZ-Soil	Y	N
	02489: -	Y	N

Site Need Code: ID-S.2.07

Site Need Name: Accurate, Representative Downhole Moisture Measurements in Unconsolidated, Consolidated, and Bedrock Materials

Focus Area Work Package ID:

Focus Area Work Package:

Focus Area:

Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both): Cost

Technologies	Cost Savings (in thousands of dollars)	Range of Estimate

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Technology Needs

Related CCP Milestones	Related Waste Streams	Agree?	Change?
	02483: -	Y	N
	02496: W5 - MTRU-Sludge	Y	N

Technology Deployments

	Deployment Year		
Deployment Status	**Planned**	**Forecast**	**Actual Date**
Technology Name: Cooperative Telerobotic Retrieval			
Potential Deployment	2002		
Technology Name: ResonantSonic Drilling			
Deployment Commitment	1999	1999	
Technology Name: In Situ Vitrification - Top Down			
Deployment Commitment	2000	2000	
Technology Name: Barometrically Enhanced Remediation Technology (BERT)(TM)			
Potential Deployment	1999		
Technology Name: Remote Operated Excavator (REMEX)			
Potential Deployment	2002	2002	
Technology Name: Borehole Nuclear Logging			
Deployment Commitment	1999	1999	
Technology Name: In-situ Thermal Desorption			
Potential Deployment	2000	2000	

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Technology Deployments

		Deployment Year		
Deployment Status		**Planned**	**Forecast**	**Actual Date**
Technology Name:	In-situ Grouting with Cement and Polymers			
Potential Deployment		2000	2000	